

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP 2004/	International filing date (day/month/year)	(Earliest) Priority Date (day/month/year)
Applicant 053177		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (see Box No. II)

3. ☐ Unity of invention is lacking (see Box No. III)

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

Written Opinion of the Inter-
national Searching Authority

JAP5 Rec'd PCT/PTO 31 JUL 2006
PCT/EP2004/053177
Appended Sheet

Re: Section V

1. Reference is made to the following documents:

- D1 US 2003/171026 A1 (DORRHOFFER STEFAN ET AL) September 11, 2003 (2003-09-11)
D2 US 5 801 924 A (SALMONSON ET AL) September 1, 1998 (1998-09-01)
D3 DE 203 04 703 U1 (POWER MATE TECHNOLOGY CO., LTD) July 10, 2003 (2003-07-10)

2. The present application does not satisfy the requirements of Article 33(1) PCT, because the subject matter of Claim 1 is not novel within the meaning of Article 33(2) PCT.

2.1. Document D1 is considered to be the related art closest to the subject matter of Claim 1. It describes (see Figure 1 and paragraphs 1 and 20 in the specification):

A device for the accommodation of electrical elements and/or electrical circuits which is made up of a carrier (leadframe 7), onto which a circuit substrate (support plate 12), having special components fastened to it, is mounted at least over a partial surface, in an electrically insulated manner (via insulating adhesive layer 15).

2.2. In D1 it is not explicitly mentioned that the device is used for the shakeproof accommodation of electrical special components. Since the device known from D1 agrees in all subject matter features with the device specified

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in Claim 1, it is to be assumed that it, too, is suitable for a shakeproof accommodation of electrical special components within the meaning of the claim wording.

- 2.3. This being the case, no difference can be determined between the device claimed and the one known from D1.
3. Claims 2-13 do not include any features that, in combination with the features of any claim to which they refer, fulfill the requirements of the PCT with regard to novelty or inventive activity (Article 33 (2, 3) PCT).
- 3.1. As far as Claims 2-4 are concerned, D1 describes (see paragraphs 1 and 20 in the specification) an electrically insulating medium, a heat-dissipating adhesive and a printed-circuit board.
- 3.2. As far as Claims 6-8 and 10 are concerned, D2 describes that the two printed-circuit boards (motherboard 14 and daughter boards 44 and 46) are able to be connected by a combination of pins (pin arrays 16) and plug connectors (sockets 58) (see column 5, lines 20-37). Furthermore, D2 (see drawing 3), describes pins (58 and 60) which are situated on a tab on one side of the carrier.

Since in the case of the device a printed-circuit board for an engine control unit is involved, it may be assumed that SMD parts are located on the printed-circuit board, in the customary fashion in this field. To one skilled in the art, of necessity, SMD pins would come up, since, in connection with these, one of several equivalent

possibilities is involved in order to produce a connection between a circuit substrate and a main board.

It is also within the scope of normal technical activity, for one skilled in the art, to modify this device in such a way that it would be able to be connected to a control unit.

3.3. The features of Claims 9 and 11 relate to methods customary in the art for producing a connection between printed-circuit boards and control units, namely by pressing, flex foil or plug contacts. One skilled in the art would use these methods, based on normal technical activity, if it were desirable appropriately to the circumstances.

3.4. As far as Claims 5, 12 and 13 are concerned, D3 describes screw openings (see Drawing 1) in the carrier (aluminum base plate 11; see page 2, lines 25-30) in order to fasten the carrier to a control unit. One skilled in the art would regard openings for possibly passing-through contact pins as a similar alternative to the screw openings, and would fall back on this according to the circumstances.

Re. Section VIII

The Application does not satisfy the requirements of Article 6 PCT, because Claim 1 is not clear.

The relative term "shakeproof" used in Claim 1 has no generally recognized meaning, and may be interpreted as desired. This has the result that the definition of the subject matter of this claim is not clear, particularly since this term is essential to the present invention in the case at hand.

Therefore, Claim 1 should be clarified by stating the technical features which contribute to the special components' being accommodated in a shakeproof manner.